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State of Utah

DEPARTMENT OF NATURAL RESOURCES

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Executive Director

Division of Water Rights

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State Engineer/Division Director

August 1, 2011

Darrell Foote
1625 Pinecrest Court
Reno, NV 89523

Warren Foote
60 N 100 East
Kanab, UT 84741

Dear Darrell and Warren:

On July 12, 2011, I conducted a calibration inspection on most of the Diversions on East Fork of the Virgin Distribution System. I was accompanied by the new Water Commissioner, Jeff Medlin. For the Barracks Ranch diversion, this was a follow up to our visit with Warren on April 26 & 27 2011, where we took weir crest measurements and checked the staff gauge.

During the recent inspection, I noted the grating over the Pipe entrance should be cleaned or replaced; excessive "travertine" or lime buildup on the screen prevents the pipe from receiving all the water measured. The sluice structure should be regularly drained, inspected and cleaned to provide effective silt removal. I understand that your diversion operates with the bottom sluice gate slightly open, which provides continuous cleaning, but it may be beneficial to drain the basin occasionally when silting and build up is a problem.

Most notable was measurement calibration: we checked the width of the weir crest and measured 11.0 feet wide, with slanted sides, this make it a "Cipoletti" style weir. If you have a calibration table for a 11.0 wide Cipoletti weir, we can use that, otherwise, I have developed a calibration table for an 11.0' Cipoletti weir (attached). To insure accurate readings, the staff gauge should be checked to insure its mounted level with the crest of the weir, and the weir itself should be checked for level side to side. The staff gauge must be kept clean. These all assure accuracy and fairness in the measurement. You should contact Jeff Medlin, the Water Commissioner [(435) 648-2899 or (937) 369-8612)] for his assistance, if needed

During my last trip I had a chance to talk with Eddie Myers, he spoke very highly of you two and the working relationship he has had for years in taking turns during the low water periods. I commend both of you and him for making this arrangement work. As a distribution engineer and in conjunction with the water commissioner's duties we will strive equitably measure and distribute the available water and want to insure that the upper diversions are managed to the same percent cutbacks that you experience being the last diversion on the system. If there are any problems, we need to be made aware of, I encourage you to contact us and voice your concerns.

It has been most pleasurable working with you two fine brothers in the recent years, I hope that recent damage caused by the December 2010 flooding and recent high runoff can be mitigated and your diversion structure can sustain future flows with the needed work and assistance you are currently soliciting. If I can be of any assistance or advocacy in that regard, please contact me directly. Otherwise if you have questions, I can be reached at (801) 538-7430 or at MikeSilva@utah.gov. My next visit is planned for August 16th 2011; I will try to stop in at the ranch if time is available to do so.

Sincerely,

Mike Silva
Distribution Engineer



**Flow over Standard
 contracted Cipolletti weir**

11 foot wide Cipolletti Weir

$$Q = 3.367(Lh^{1.5})$$

11 foot wide Cipolletti Weir

Height over Weir Height in Feet	Flow CFS
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0.20	3.28
0.21	3.53
0.23	4.05
0.25	4.59
0.27	5.15
0.29	5.73
0.31	6.34
0.33	6.96
0.35	7.60
0.37	8.26
0.39	8.94
0.41	9.64
0.43	10.35
0.45	11.08
0.47	11.83
0.49	12.59
0.51	13.37
0.53	14.16
0.55	14.97
0.57	15.80
0.59	16.63
0.61	17.49
0.63	18.35
0.65	19.23
0.67	20.13
0.69	21.04

